

CLAIMS

What is claimed is:

1. A system for improving space allocation in an HVAC system structure, the system comprising:

an outdoor cabinet, the cabinet having a floor;

a compressor having a housing with an upper housing section and a lower housing section and connections to the unit further comprising a suction tube connection, a discharge tube connection and an electrical connection;

an offset mounting foot having a main body with a top surface, an opposed bottom surface and perimeter surface side walls extending between the top and bottom surfaces, the top surface including a depression that is offset in a direction of one of the perimeter surface side walls, the depression conforming to at least a portion of the compressor lower housing so as to receive the compressor on installation onto the floor of the cabinet, the compressor suction tube connection, discharge tube connection and electrical connection falling within a volume extending upward from the offset mounting foot, wherein the footprint provides the base area for the upwardly extending volume;

means for damping attached to the offset mounting foot and contacting the cabinet floor; and

means for assembling the compressor and the offset mounting foot together to form an assembly, the compressor centered in the top surface depression, the bottom surface of the offset mounting foot being the bottom surface of the assembly and installed onto the floor of the cabinet.

2. The system of claim 1 wherein the offset mounting foot includes a plurality of bosses and the means for assembling the compressor to the offset mounting foot to form an assembly includes welding the compressor housing to the bosses.

3. The system of claim 1 wherein the offset mounting foot include a plurality of apertures and the means for assembling the compressor to the offset mount foot include a plurality of threaded fasteners extending through the apertures to secure the compressor to the mounting foot.
4. The system of claim 3 wherein the plurality of threaded fasteners includes threaded bolts extending through the apertures and threaded nuts with washers attached to the threaded bolts to secure the compressor to the mounting foot.
5. The system of claim 1 wherein the offset mounting foot further includes a plurality of appendages extending from the main body, each appendage including an aperture, each aperture positioned at a predetermined location to correspond to a locating pin in the floor of the cabinet.
6. The system of claim 5 wherein the means for damping are assembled through the aperture in each appendage in the plurality of appendages.
7. The system of claim 5 wherein the means for damping is a resilient elastomeric grommet.
8. The system of claim 5 wherein the resilient elastomeric grommet is comprised of EPDM rubber.
9. The system of claim 1 wherein the offset mounting foot further includes an aperture extending between the top surface and the bottom surface and centered about at the center of the minimum distance between the top surface and the bottom surface, the aperture sized so that the compressor housing when assembled to the offset mounting foot does not extend below the bottom surface of the mounting foot.
10. A system for improving space allocation in an HVAC system structure, the system comprising:
an outdoor cabinet, the cabinet having a floor;

a compressor having a housing with an upper housing section and a lower housing section and connections to the unit further comprising a suction tube connection, a discharge tube connection and an electrical connection;

an offset mounting foot having a main body with a top surface, an opposed bottom surface and perimeter surface side walls extending between the top and bottom surfaces, the bottom surface being installed onto the floor of the cabinet, the offset mounting foot further including a main body, a plurality of appendages extending from the main body with perimeter surface segments forming a portion of the perimeter surface sidewalls extending between the appendages, the top surface including a depression that is offset in a direction of one of the perimeter surface segments, the depression conforming to at least a portion of the compressor lower housing section so as to receive the compressor on installation onto the floor of the cabinet, the compressor suction tube connection, discharge tube connection and electrical connection falling within a footprint for the offset mounting foot, wherein the footprint is a rectangular area into which the perimeter of the offset mounting foot can be arranged;

means for damping attached to the offset mounting foot and contacting the cabinet floor; and

means for assembling the compressor and the offset mounting foot together to form an assembly, the compressor centered in the top surface depression, the bottom surface of the offset mounting foot being the bottom surface of the assembly and installed onto the floor of the cabinet.

11. The system of claim 10 wherein the offset mounting foot includes a plurality of bosses and the means for assembling the compressor to the offset mounting foot to form an assembly includes welding the compressor housing to the bosses.
12. The system of claim 10 wherein the offset mounting foot include a plurality of apertures and the means for assembling the compressor to the offset mount foot

include a plurality of threaded fasteners extending through the apertures to secure the compressor to the mounting foot.

13. The system of claim 12 wherein the plurality of threaded fasteners includes threaded bolts extending through the apertures and threaded nuts with washers attached to the threaded bolts to secure the compressor to the mounting foot.
14. The system of claim 10 wherein each appendage in the plurality of appendages of the offset mounting foot including an aperture, each aperture positioned at a predetermined location to correspond to a locating pin in the floor of the cabinet.
15. The system of claim 14 wherein the means for damping are assembled through the aperture in each appendage in the plurality of appendages.
16. The system of claim 15 wherein the means for damping is a resilient elastomeric grommet.
17. The system of claim 16 wherein the resilient elastomeric grommet is comprised of EPDM rubber.
18. The system of claim 10 wherein the offset mounting foot further includes an aperture extending between the top surface and the bottom surface and centered about at the center of the minimum distance between the top surface and the bottom surface, the aperture sized so that the compressor housing when assembled to the offset mounting foot does not extend below the bottom surface of the mounting foot.
19. An offset mounting foot for attachment of a compressor, comprising:
 - a top surface;
 - a bottom surface;
 - sidewalls connecting the top surface to the bottom surface to form a main body having a geometric shape, the sidewalls forming a perimeter around the main body;

the top surface having a profile generally in the form of a concavity, a low point of the concavity, where the top surface achieves its closest approach to the bottom surface, being offset in a direction of one of the sidewalls forming the perimeter.

20. The offset mounting foot of claim 19 wherein the geometric shape of the main body is substantially rectangular.
21. The offset mounting foot of claim 19 wherein the geometric shape of the main body is substantially square.
22. The offset mounting foot of claim 19 where the geometric shape of the main body is substantially circular.
23. The offset mount foot of claim 19 further including a plurality of appendages extending outward from the main body, the appendages having top and bottom surfaces contiguous with the main body and having perimeter surface segments joining the top surfaces of the appendages to the bottom surface of the appendages, the perimeter surface segments of the appendages and the sidewalls of the main body forming a continuous outer perimeter.
24. The offset mounting foot of claim 19 wherein top surface smoothly transitions from the low point of the concavity to a high point toward the perimeter.
25. The offset mounting foot of claim 23 wherein top surface smoothly transitions from the low point of the concavity to a high point toward an appendage of the plurality of appendages.
26. The offset mounting foot of claim 23, wherein each appendage includes an aperture, each aperture positioned at a predetermined location.
27. The offset mounting foot of claim 23 wherein the low point of the concavity is offset in a direction of one of the appendages.

28. The offset mounting foot of claim 19 further including means for attaching the compressor housing to the mounting foot.
29. The offset mounting foot of claim 19 wherein the means for attaching the compressor to the housing includes a plurality of bosses for welding the housing to the mounting foot.
30. The offset mounting foot of claim 19 wherein the means for attaching the compressor to the housing includes a plurality of apertures for accepting threaded fasteners.
31. The offset mounting foot of claim 19 including a bore extending through the top surface and the bottom surface and centered at about the low point of the concavity, the bore of pre-selected size to accept a compressor housing so that the compressor housing does not extend below a plane that includes the bottom surface.
32. The offset mounting foot of claim 19 wherein the concavity forms the profile of the top surface and the concavity is completely accommodated within the main body, and wherein a high point is reached in the top surface at the sidewalls and inward.
33. The offset mounting foot of claim 23 wherein the concavity forms the profile of the top surface and a high point of the top surface is reached in at least one of the appendages.
34. The offset mounting foot of claim 33 wherein the high point is reached in at least one of the appendages proximate to where the appendages join the main body, and the profile of the top surface of the appendages transitions downward from the high point toward a distal edge of the appendages away from the main body.
35. The offset mounting foot of claim 34 wherein the transition downward toward the distal edge of the appendages is a stepwise downward transition.

36. The offset mounting foot of claim 23 wherein a distal edge away from the main body of at least one appendage of the plurality of appendages has a bottom surface that lies between a plane that includes the bottom surface of the main body and a plane that includes the top surface of the distal edge of the appendage.
37. The offset mounting foot of claim 19 wherein the offset mounting foot is steel.
38. The offset mounting foot of claim 37 wherein the steel has a thickness of from about 0.060 inches to about 0.250 inches.